REMARKS

Rejection under 102(e) based on Chen et al. (US 6908185)

The rejection of claims 1-14 and 17-20 under 35 U.S.C. § 102(e) as being anticipated by Chen et al. (US 6908185, hereinafter "Chen") is hereby traversed, reconsideration is respectfully requested.

Under 35 U.S.C. § 102(e), Chen can only be prior art against the claims in this case if it was filed "by another", i.e., by a different inventive entity. MPEP § 2136.04. Applicant respectfully notes that the joint inventors in Chen and the joint inventors in this case are the same, namely Xiahoe Chen and George M. Sarkisian. Accordingly, Chen was not filed "by another" and is not prior art under 35 U.S.C. § 102(e). Withdrawal of this rejection is earnestly requested.

Rejection under 102(e) based on Valentini et al. (US 2005/0020730)

The rejection of claims 1-3, 5-9, 13-14 and 17-20 under 35 U.S.C. § 102(e) as being anticipated by Valentini et al. (US 2005/0020730, hereinafter "Valentini '730") taken in view of Valentini et al. (US 2003/0184629, hereinafter "Valentini '629") is hereby traversed, reconsideration is respectfully requested.

Claim 1 (and claims 2-3, 5-9, 13-14 and 17-20 that include all of the limitations of claim 1) defines an ink composition that includes *inter alia* an amount of a *water-soluble* polyurethane. In contrast, Valentini '730 teaches ink compositions that include an amount of a *water-insoluble* polyurethane *dispersion* (see [0053]: "These are polymers that are in a heterogeneous *dispersed* phase *rather than dissolved* in the vehicle [...]"; see also [0054]: "Particularly preferred are polyurethane *dispersion* binders as those disclosed in [Valentini '629]").[1] Since Valentini '730 does not teach every element of claim 1 it cannot anticipate the rejected claims. MPEP § 2131. In fact, by teaching the use of water-insoluble polyurethane dispersions, Valentini '730 *teaches away* from the claimed invention. Withdrawal of this rejection is earnestly requested.

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[1] Applicant further points the Examiner to [0090]-[0092] of Valentini '730 that describe the preparation of two polyurethane *dispersion* binders (PUD1 and PUD2) and provides median *particle* diameters for the dispersions – a clear indication that the polyurethane polymers present in the ink compositions of Valentini '730 are *water-insoluble*, not *water-soluble* as claimed.

Rejection under 103(a) based on Chen et al. (US 6908185) or Valentini et al. (US 2005/0020730) in view of Elwakil (US 5833743)

The rejection of claims 15-16 under 35 U.S.C. § 103(a) as being unpatentable over Chen or Valentini '730 in view of taken in view of Elwakil (US 5833743, hereinafter "Elwakil") is hereby traversed, reconsideration is respectfully requested.

As discussed above, Chen is not prior art while Valentini '730 does not teach every element of claim 1 (and thus of dependent claims 15-16). Elwakil is cited as a secondary reference that teaches a pH range limitation found in dependent claims 15-16. The Examiner does not point to any teaching in Elwakil that could provide the claim elements that are missing from Valentini '730. Accordingly, since the combination of Elwakil and Valentini '730 does not teach every element of the rejected claims it cannot render them unpatentable. MPEP § 2143.03. Withdrawal of this rejection is earnestly requested.

Rejection under 103(a) based on Valentini et al. (US 2005/0020730) in view of Kashiwazaki et al. (US 5696182)

The rejection of claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Valentini '730 in view of Kashiwazaki et al. (US 5696182, hereinafter "Kashiwazaki") is hereby traversed, reconsideration is respectfully requested.

As discussed above, Valentini '730 does not teach every element of claim 1 (and thus of dependent claim 10). Kashiwazaki is cited as a secondary reference that teaches a co-solvent found in dependent claim 10. The Examiner does not point to any teaching in Kashiwazaki that could provide the claim elements that are missing from Valentini '730. Accordingly, since the combination of Kashiwazaki and Valentini '730 does not teach every element of the rejected claim it cannot render it unpatentable. MPEP § 2143.03. Withdrawal of this rejection is earnestly requested.

Rejection under 103(a) based on Nichols et al. (US H2113 H)

The rejection of claims 1-10, 13-16 and 18-20 under 35 U.S.C. § 103(a) as being unpatentable over Nichols et al. (US H2113 H, hereinafter "Nichols") is hereby traversed, reconsideration is respectfully requested.

Claim 1 (and claims 2-10, 13-16 and 18-20 that include all of the limitations of claim 1) defines an ink composition that includes *inter alia* an amount of a *water-soluble* polyurethane. In contrast, Nichols teaches ink compositions that include an amount of a polyurethane *resin emulsion* (see Abstract; see also column 1, lines 66 to column 2, lines 4 "Particularly useful as the latex resin are known waterborne polyurethane *dispersions*, which resins or polymers [...] can be prepared by polymerizing a polyurethane in a solvent followed by *dispersing* the mixture in water," *emphasis* added). The polyurethane resin emulsions of Nichols are the same as the polyurethane dispersions of Valentini '730 that were discussed above. By definition, both are water-insoluble.[2] Since Nichols does not teach every element of claim 1 it cannot anticipate the rejected claims. MPEP § 2131. In fact, by teaching the use of water-insoluble polyurethane dispersions, Nichols *teaches away* from the claimed invention. Withdrawal of this rejection is earnestly requested.

Rejection under 103(a) based on Hirasa et al. (US 2002/0019458) in view of Hayashi (US 6500248)

The rejection of claims 1-10 and 17-20 under 35 U.S.C. § 103(a) as being unpatentable over Hirasa et al. (US 2002/0019458, hereinafter "Hirasa") in view of Hayashi (US 6500248, hereinafter "Hayashi") is hereby traversed, reconsideration is respectfully requested.

To establish a *prima facie* case of obviousness based on a combination of references, three basic criteria must be met. First, the combined references must teach or suggest all of the claimed elements. Second, there must be some suggestion or motivation in the references or in the knowledge generally available to one of ordinary skill in the art, to combine the reference

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[2] Applicant further points the Examiner to column 4, lines 9-13; column 7, lines 1-8; and column 17, lines 6-12 of Nichols that describe processes for preparing polyurethane *resin emulsions* and provide *particle* diameters for the emulsions – a clear indication that the polyurethane polymers present in the ink compositions of Nichols are *water-insoluble*, not *water-soluble* as claimed.

teachings in a way that produces the claimed invention. Finally, there must be a reasonable expectation of success. MPEP § 2142.

Here, the Examiner's *prima facie* case fails on at least the first and second criteria. With respect to the motivation to combine the reference teachings, the Examiner relies on the fact that Hayashi teaches an ink "with improved color development that does not exhibit feathering or bleeding." It is the Examiner's view that a skilled person would be motivated to introduce these beneficial properties into Hirasa's ink by adding just one of the ingredients of Hayashi's ink, namely a 1,2-alkydiol. Applicant respectfully submits that the Examiner's argument is a classic example of impermissible hindsight reconstruction. Indeed, Hayashi does not teach that adding a 1,2-alkyldiol to *any* ink will provide these beneficial properties. Instead, all that Hayashi teaches is that inclusion of *four to five* very specific ingredients (namely "a 1,2-alkanediol, glycerin, a polyhydric alcohol derivative and/or an acetylene glycol surfactant, a water-soluble organic solvent [...]", see Abstract) in an aqueous pigment formulation produces an ink with these beneficial properties. Based on these teachings, a skilled artisan would not be motivated to pick out 1,2-alkanediol from this list and then add it to the entirely different ink composition of Hirasa in the expectation that this would yield an ink "with improved color development that does not exhibit feathering or bleeding." Besides, even if the skilled artisan were motivated to modify Hirasa's ink in this manner, he or she would have no idea as to how the ink would behave, let alone the reasonable expectation of success that is required to make a *prima facie* case of obviousness. For these reasons, withdrawal of this rejection is earnestly requested.

Rejection under 103(a) based on Hirasa et al. (US 2002/0019458) in view of Hayashi (US 6500248) and Ma et al. (US 5648405)

The rejection of claims 13-14 under 35 U.S.C. § 103(a) as being unpatentable over Hirasa in view of Hayashi and Ma et al. (US 5648405, hereinafter "Ma") is hereby traversed, reconsideration is respectfully requested.

As discussed above, the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 1 based on the combination of Hirasa and Hayashi. Ma is cited as a secondary reference that teaches the desirability of inks with viscosities of less than 10 cps (dependent claims 13-14 require viscosities in the range 1.5 to 6 cps and 2 to 3.4 cps,

respectively).[3] The Examiner does not point to any teaching in Ma that could remedy the aforementioned lackings in the combined teachings of Hirasa and Hayashi. Since the combination of Hirasa and Hayashi does not render claim 1 obvious and since Ma does not remedy this failure, claims 13-14 that depend from claim 1 cannot be found obvious in light of any combination of the three references. Withdrawal of this rejection is earnestly requested.

Rejection under 103(a) based on Hirasa et al. (US 2002/0019458) in view of Hayashi (US 6500248) and Elwakil (US 5833743)

The rejection of claims 15-16 under 35 U.S.C. § 103(a) as being unpatentable over Hirasa in view of Hayashi and Elwakil is hereby traversed, reconsideration is respectfully requested.

As discussed above, the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 1 based on the combination of Hirasa and Hayashi. Elwakil is cited as a secondary reference that teaches a pH range limitation found in dependent claims 15-16. The Examiner does not point to any teaching in Elwakil that could remedy the aforementioned lackings in the combined teachings of Hirasa and Hayashi. Since the combination of Hirasa and Hayashi does not render claim 1 obvious and since Elwakil does not remedy this failure, claims 15-16 that depend from claim 1 cannot be found obvious in light of any combination of the three references. Withdrawal of this rejection is earnestly requested.

Conclusion

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4793. It is not believed that extensions of time or fees for net addition of claims are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and

[3] Applicant respectfully notes that the generic suggestion that inks with viscosities of less than 10 cps exhibit beneficial properties falls far short of teaching the specifically claimed ranges. Applicant also notes that claims 13-14 further require that the ink have a specific surface tension.

any fees required for consideration of this paper (including fees for net addition of claims) are authorized to be charged in two copies of an Amendment Transmittal Letter filed herewith.

Respectfully submitted,
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